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STATE OF COLORADO

Roy Romer Governor
Patricia A. Nolan MD MPH Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

September 15, 1994

Mr Steve Slaten
U S Department of Energy
Rocky Flats Office, Bldg 116
P O Box 928
Golden Colorado 80402-0928

RE Supplemental Ground Water Fate and Transport Model
Documentation to Support Draft Final CMS/FS Rocky Flats
Environmental Technology Site 881 Hillside Area Operable
Unit 1 August 1994

Dear Mr Slaten,

The Colorado Department of Public Health and Environment Divisions of Water Quality Control (WQCD) and Hazardous Materials and Waste Management (HMWMD the Divisions) have made a preliminary review of the ground water flow and transport modeling presented in this document. The Divisions find that sufficient documentation of the modeling effort has not been presented in this report to allow the Divisions to complete this review and issue comments regarding the modeling.

Appendix B presents only Groundwater Modeling Results. The tabulation of input parameters does not present data supporting model parameters which are derived from equations. Other parameters used in modeling were not presented. The process of steady state and transient calibration is not clearly documented. Presentation of only graphical calibration results is not sufficient, tables and statistics must be included. Attachment I lists these specific items.

The Divisions request the information specified in Attachment I be submitted within seven calendar days of receipt of this request. Any information that can not be submitted within 1 week must be explained and a schedule presented for its submittal.

Additionally, the constant concentration boundary condition used in transport modeling is an addition to TARGET that is not included or documented in the State's version of the TARGET model. Documentation of this programming change must be submitted and the State's version of TARGET updated to include this change.

ADMIN RECORD

SEP 16 1994

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If you have questions regarding this request, please call Jeff Swanson of my staff at 692-3416, or Elizabeth Pottorff of WQCD at 692-3586

Sincerely,

A handwritten signature in cursive script, appearing to read "Joe Schieffelin".

Joe Schieffelin
Rocky Flats IAG Unit Leader
Facilities Section
Hazardous Waste Control Program

cc Martin Hestmark EPA
Scott Grace DOE
Zeke Houk, EG&G
Steve Tarlton, CDPHE-OE
Laura Perrault, AGO

ATTACHMENT I
Specific Additional Ground Water Fate and Transport Model
Documentation Requested by CDPHE in Support of Draft Final
CMS/FS, Rocky Flats Environmental Technology Site 881
Hillside Area, Operable Unit 1, August 1994

- 1) Degree of saturation and relative permeability curves The way this information is implemented in the TARGET model needs discussion
- 2) Thickness of modeled profile
- 3) Calculation of the distribution coefficients for each contaminant
- 4) Convergence criteria used in modeling and timesteps used in transport modeling
- 5) Meetings with Dames and Moore and EG&G during the modeling process indicated the steady state calibration was actually a long term transient calibration without changes in parameters it is not clear whether this is still the case
- 6) Meetings with Dames and Moore and EG&G during the modeling process also indicated there was not sufficient time for a formal sensitivity analysis of input parameters It was requested at that time that the range of parameters tried in the calibration process and their effect be presented The alternate request was that CDPHE be given the model input files to perform a sensitivity analysis of parameters
- 7) Tables of residuals and calibration statistics should be presented for each stage of modeling including the extraction well french drain and transient simulation
- 8) Tables documenting the modeled water budget should also be included The modeled water budget should be compared to conceptual model estimates of the water budget